OF PLANNING AND PROGRAMME IMPLEMENTATION (SHRI RAM NAIK): (a) to (d) Fifty-five small hydro power plants of an aggregate capacity of 222.43 MW have so far been sanctioned and an amount of Rs. 138.57 crores disbursed by BREDA, for these projects. Seventeen small hydro power plants of an aggregate capacity of 34.38 MW have been commissioned and these plants are estimated to generate about 36 AMU of electricity annually. Remaining projects are scheduled for commissioning during 1998 and 1999.

Power from Ocean

4065. SHRI VAYALAR RAVI: Will the PRIME MINISTER be pleased to state:

(a) whether Govemment have made any study to produce power from Ocean;

(b) whether any such project was initiated in Tamil Nadu with U.S. collaboration; and

(c) if so, the details and the present status of the project?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS AND THE MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS AND THE MINISTER OF STATE IN THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION (SHRI RAM NAIK): (a) Yes, Sir. The Ministry has supported feasibility studies in selected sites for producing power from ocean through ocean thermal energy conversion and tidal energy.

(b) and (c) A Memorandum of Understanding (MOU) was signed on 24.1.1994 between Sea Solar Power, Inc. of USA and Tamil Nadu Electricity Board/Tamil Nadu Energy Development Agency regarding 100 MW ocean thermal power project at the Off-shore of Kulasekarapattinam in Tamil Nadu. The proposal was for the establishment, operation and maintenance of the proposed project estimated to cost around US $ 250 million for tbe supply, erection and commissioning of 100 MW floating type ocean thermal eneigy conversion sea power plant. However, Tamil Nadu Electricity Board infonned this Ministry in 1997 that the MOU stands caocelled, as deciried by the Govemment of Tamil Nadu, as the project was not 'cost effective.

Ocean development studies

4066. SHRI VAYALAR RAVI Will the PRIME MINISTER be pleased to state:

(a) whether Govemment have taken further initiative for Ocean development studies; and

(b) what are the new areas of research and the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF PERSONNEL PUBLIC GRIEVANCES AND PENSIONS AND THE MINISTER OF STATE IN THE MINISTRY OF FINANCE (SHRI R. JANARTHANAM): (a) Yes, Sir.

(b) Some of the major new areas of research proposed to be pursued during the 9th Five Year Plan period are as under :—

* Development and demonstration of shallow bed mining system upto 500*m* depth off Indian coast, as the first step towards mining of Pollymetalic Nodules, under a joint technology development project with external assistance and generation of a detailed technical report for development of technologies and hardware for mining of nodules from 6000 m. depth.
* Commissioning of a continuous metal extraction pilot plant as a joint project with M/s Hindustan Zinc Ltd for 4-metaI recovery process of PMN with a capacity of 500 kg per day and generation of process data for future conunetcial plant capable of processing 1.5 million tons of nodules per year.
* Design and techno-economic viability study for a commercial metallurgical plant.
* Development of a new power module to improve efficiency of wave energy conversion incorporating impulse turbine with movable guide blades and a common shaft single turbine connected to the variable speed induction generator and testing it at the Wave Eneigy plant at Vizhinjam.
* Establishment of one MW pilot technology demonstration Ocean